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AUTHOR Doak, J. Linward; Walker, Jo Ann
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ABSTRACT

This study focused on elementary children's shift from syntagmatic to paradigmatic word association and their consistency in responding again with the same word. Subjects, 128 children ranging from first through sixth grade in the Model Laboratory School (Richmond, Kentucky), were presented with 20 structural words and 20 lexical words. The subjects were instructed to respond with a free word association. First graders were found to be significantly different from other grades in both paradigmatic responding and consistency of response. No significant differences were found between second through sixth graders on either task. These findings point to educational experience as a primary cause for this change in verbal responding. References compiled by James Dinnan on paradigmatic/syntagmatic behavior and the reading process are included. (MB)

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TITLE The Quality and Consistency of Elementary Children's Word Associations

FIRST AUTHOR Dr. J. Linward Doak
Associate Dean of the College of Education
Eastern Kentucky University
Richmond, Kentucky

SECOND AUTHOR Mrs. Jo Ann Walker
Assistant Professor of Education
Elementary Counselor, Model Laboratory School
Eastern Kentucky University
Richmond, Kentucky

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The Quality and Consistency of
Elementary Children's Word Associations

This study of elementary children's shift from syntagmatic to paradigmatic word associations and, further, their consistency of responding again with the same word. Paradigmatic and syntagmatic responses will be classified according to the article by Dinnan (1971) with coordinates, superordinates, and contrasts classified as paradigmatic; and closure, chaining, repeats, and phonological pairing classified as syntagmatic.

Stimulus words were classified as lexical or structural words. Lexical words are nouns, main verbs and adjectives that can be pictured in concrete form and structural words include all other words and do not easily elicit a concrete representation.

Kingston and Weaver (1969) in a study of first graders found no difference in structural or lexical cloze items and Doak (1969) found in a study of kindergarten subjects no difference in commonality of associations of lexical and structural words. It would appear that as age increases, lexical words would first elicit more paradigmatic responses with structural words laging behind in paradigmatic responding.

Entwistle, Forsyth, and Muss (1964) studied K, 1, 3 and 5 graders

finding a definite shift from syntagmatic to paradigmatic responding between the ages of 6 and 8 years. Entwistle (1966) studying 1, 3 and 5 graders found an increase in paradigmatic responding from grades 1 to 5, with majority of 5th grade responses being paradigmatic. McNinch, Richmond and Hornsby (1970) studied 2, 4, 6 and 8 graders finding 2nd graders giving fewer paradigmatic responses than others. Further, if their subjects first responded paradigmatically to a word, they would again later respond paradigmatically to the same word.

This study will test the consistency of responses to ascertain if the same word will be given to a later task (same stimulus word) or will a different word be given.

There is much speculation as to the reason for this shifting of word assocation from syntagmatic to paradigmatic. Erwin (1961) speculates that, "Perhaps the changes as a function of age reflects educational experience." Vocabulary words are taught with the use of antonyms and synonums and this experience may cause the syntagmatic-paradigmatic shift. McNinch (1972) found the students in the lower quartile of the economic strata did not respond differently than the upper quartile when responding to a free association task.

This research will address three questions while studying first through sixth grade subjects.

1. When does the shift from predominately syntagmatic responding shift to predominately paradigmatic responding?
2. What is the difference in response across grade levels to

lexical and structural words?

3. Is there consistency in association, will the same word be elicited the next day or two weeks later?

These findings do not clarify the question as to cause of this shift, whether developmental or experiental.

Procedure. One hundred and twenty-eight subjects ranging from first through sixth grade in Model Laboratory School, Richmond, Kentucky were presented with twenty structural words and twenty lexical words. The subjects were to respond giving a free word association. Since most of the subjects would not be able to spell the first word that came to mind, a college student was paired with each elementary student to serve as "secretary."

The stimulus words were presented by means of a tape recorder with the subject whispering the response word to his "secretary" who then recorded the word. This was the procedure using the same list of words, on a Tuesday, one day later on Wednesday, and two weeks later on Tuesday. Forty words, (twenty lexical and twenty structural) were selected from Comena"s (1968) list of words in levels of learning difficulty. The chi-square statistical test was used to test significant differences.

All subjects were given the Short Form Test of Academic Aptitude and the mean scores for each grade calculated. This means ranged from 108-114 and a t-test calculated revealed no significant difference between grade levels in academic aptitude.

Table 1 represents the total responses for all three administrations of the lexical word list by grade level. Responses were classified as paradigmatic or syntagmatic. The greatest difference found was between first graders and other elementary subjects. First graders gave about the same number of paradigmatic responses as syntagmatic with even a greater percentage of indeterminate responses. Second graders were significantly different responding to lexical words 45% paradigmatically and 55% syntagmatically. From third grade through sixth grade there was a general increase in paradigmatic responses and a decrease in syntagmatic responses. Only the fourth grade varied slightly from this pattern.

Table 2 shows percentages of syntagmatic and paradigmatic responses to structural words. There is a significant difference between first grade and other grades, with only 13% paradigmatic responses and 87% syntagmatic responses from first graders. There was again a general increase in the number of paradigmatic responses from first through sixth grade except for the same fourth graders who again varied slightly from the pattern.

The results show that responses to lexical words are predominately paradigmatic by third grade but responses to structural words are not predominately paradigmatic even by sixth grade. Structural words are not "picture" words making it more difficult to respond to these more abstract words.

This raises the question of consistency of association. Will the subject give the same response word the second and third time the word

is presented? Table 3 presents this information concerning lexical words. Again, first graders differed from other grades but little difference from second through sixth grade. First graders gave the same word the next day 27.5% and a different word 72.3%. Slightly more than half of second, third, fourth, fifth, and sixth graders gave the same word. On the third presentation two weeks later, again, first graders differed from the other grades, but no significant difference between second through sixth grade. First graders gave the same response again they gave in the first administration 18.2%, gave the same word as the alternate word given at the second administration 10.7%, and gave a completely different word 71.1%. Again no significant difference was found between second through sixth grade.

Table 4 presents the consistency of response to structural words. Again, first graders differed from other grades with no significant difference between second through sixth grade. First graders gave the same response on the second trial as the first 20.2% and a different word 79.8%. On the third trial, first graders gave the same word presented the first day 13.4%, the different word given the second administration 13.2% and a different word from either the first or second administration 73.4%. By observing Table 4, one can see little difference between second through sixth graders.

From this sample we may conclude that paradigmatic free associations to lexical words become predominate at the third grade level. Paradigmatic free associations to structural words do not develop as early as to lexical words. The only significant difference found between grade

levels was between first graders and other grades.

In consistency of association, again the only significant difference between grades whether the stimulus word is lexical or structural is between first graders and other grades. The pattern of response to both lexical or structural words (see Table 3 and 4) is strikingly similar for second through sixth grade.

These results indicate that subjects enter first grade with a comparable academic aptitude to other levels of elementary school subjects but must learn or develop the communication pattern exhibited by older students during the first year of school. Results of this study show no significant differences between second, third, fourth, fifth or sixth graders either by quality of responses or consistency of response. We do see a steady increase in paradigmatic associations with grade level although by third grade the predominate response to lexical words is paradigmatic. We must agree with Erwin (1961) that the syntagmatic-paradigmatic shift does appear to reflect educational experience.

Table 1

Categorization of Lexical Words Using the Total (Percentage) of Three Administrations of the Test

		Paradigmatic		Syntagmatic	
Grade	Number of Subjects	Number Responses	Percentage	Number Responses	Percentage
1	22	389	.29	931	.71
2	20	539	.45	661	.55
3	30	649	.54	551	.46
4	24	763	.53	677	.47
5	21	745	.59	515	.41
6	21	826	.66	434	.34

Table 2

Categorization of Structural Words Using the Total (Percentage) of Three Administrations of the Test

Grade	Number of Subjects	Paradigmatic		Syntagmatic	
		Number Responses	Percentage	Number Responses	Percentage
1	22	172	.13	1148	.87
2	20	356	.30	844	.70
3	20	542	.45	658	.55
4	24	510	.35	930	.65
5	21	511	.41	749	.59
6	21	590	.47	670	.53

Table 3

Consistency of Association in Subsequent Lexical Free Word Associations in Percentages

	ADMINISTRATION		ADMINISTRATION		
Grade	1	2	1	2	3
1	27.7	72.3	18.2	10.7	71.1
2	52.5	47.5	37.8	13.0	49.2
3	51.8	48.2	42.8	14.0	43.2
4	51.0	49.0	39.2	16.6	44.2
5	51.9	48.1	42.4	13.8	43.8
6	50.7	49.3	38.3	18.1	43.6

Table 4

Consistency of Association in Subsequent Structural Free Word Associations in Percentages

	ADMINISTRATION		ADMINISTRATION		
Grade	1	2	1	2	3
1	20.2	79.8	13.4	13.2	73.4
2	37.8	62.2	31.8	9.5	58.7
3	46.2	53.8	42.0	15.8	42.2
4	44.0	56.0	35.4	14.4	50.2
5	45.0	55.0	37.9	15.9	46.2
6	45.7	54.3	37.9	14.5	47.6

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